

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

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BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN
SUNNYVALE

To:
LESTER J. VINCENT
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NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 8433P008PCT	Date of mailing (day month year)
International application No. PCT/US 08/78025	FOR FURTHER ACTION See paragraphs 1 and 4 below
Applicant DYNAMIC METHOD ENTERPRISES LIMITED	International filing date (day month year) 26 September 2008 (26.09.2008)

- ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46).
When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35
For more detailed instructions, see the notes on the accompanying sheet
- ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
- ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
 - ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices
 - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
- Reminders**
Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.
The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.
Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.
See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-272-3201	Authorized officer: Leo W. Young PCT Helpdesk 571-272-4300 PCT OSP 571-272-7774
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Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

Date in to SV FF: 12 12 08
Docketed by: B111
Reviewed by: _____
Sent Out by SV FF on: 12 11 08
upcall to F111

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To: LESTER J. VINCENT BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">Date of mailing <i>(day month year)</i></td> <td style="padding: 2px;">08 DEC 2008</td> </tr> </table>	Date of mailing <i>(day month year)</i>	08 DEC 2008
Date of mailing <i>(day month year)</i>	08 DEC 2008		
Applicant's or agent's file reference 8433P008PCT	FOR FURTHER ACTION See paragraphs 1 and 4 below		
International application No. PCT/US 08/78025	International filing date <i>(day month year)</i> 26 September 2008 (26.09.2008)		
Applicant DYNAMIC METHOD ENTERPRISES LIMITED			

1	<input checked="" type="checkbox"/> The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith. Filing of amendments and statement under Article 19: The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46). When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report. Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35 For more detailed instructions, see the notes on the accompanying sheet.
2	<input type="checkbox"/> The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3	<input type="checkbox"/> With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that: <div style="margin-left: 20px;"> <input type="checkbox"/> the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices. </div> <div style="margin-left: 20px;"> <input type="checkbox"/> no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made. </div>
4	Reminders Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis 1 and 90bis 3, respectively, before the completion of the technical preparations for international publication. The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date. Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months. See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the <i>PCT Applicant's Guide</i> , Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3291	Authorized officer: <div style="text-align: right;">Lee W. Young</div> <div style="font-size: small;"> PCT Helpdesk 571-272-4300 PCT CSBP 571-272-7774 </div>
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Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 8433P008PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below	
International application No PCT/US 08/78025	International filing date (day/month/year) 26 September 2008 (26.09.2008)	(Earliest) Priority Date (day/month/year) 26 September 2008 (26.09.2008)
Applicant DYNAMIC METHOD ENTERPRISES LIMITED		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report
 - a. With regard to the language, the international search was carried out on the basis of
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
 - b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).
 - c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.
2. ☒ Certain claims were found unsearchable (see Box No. II).
3. ☐ Unity of invention is lacking (see Box No. III).
4. With regard to the title,
 - ☒ the text is approved as submitted by the applicant.
 - ☐ the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 - ☒ the text is approved as submitted by the applicant.
 - ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the drawings,
 - a. the figure of the drawings to be published with the abstract is Figure No. 2A
 - ☐ as suggested by the applicant.
 - ☒ as selected by this Authority, because the applicant failed to suggest a figure.
 - ☐ as selected by this Authority, because this figure better characterizes the invention.
 - b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US 08/78025

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1 ☐ Claims Nos.
because they relate to subject matter not required to be searched by this Authority, namely:
- 2 ☐ Claims Nos.
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
- 3 ☒ Claims Nos. 4-9, 18-20, 25-27, and 31
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

- 1 ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
- 2 ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
- 3 ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.
- 4 ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

 International application No.
 PCT/US 08/78025

 A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - H04J 14/00 (2008.04)
 USPC - 398/45

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 Minimum documentation searched (classification system followed by classification symbols)
 USPC: 398/45

 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 USPC: 398/25, 45, 48, 57, 370/250, 252, 360

 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 PubWEST(USPT,PGPB,EPAB,JPAB); DialogPRO(Engineering); Google Scholar
 Search Terms: wavelength switch module, WSM, encoder, optical transceiver, variable optical attenuator, VOA, varying optical power, verifying optical connectivity etc.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X --- Y	US 7,174,066 B1 (Look) 6 February 2007 (06.02.2007), entire document especially col. 2, in 22-33; col. 3, in 28-44, in 50-60; col. 4, in 25-30, in 45-47; col. 6, in 1-10, in 54-61; col. 7, in 1-10, in 15-20; col. 8, in 1-10.	1-3, 10-14, 21, 28-30, and 32-33 15-17 and 22-24
Y	US 5,495,358 A (Barig et al.) 27 February 1996 (27.02.1996), entire document especially col. 1, in 55-50.	15-17 and 22-24

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents

 "A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier application or patent but published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Δ" document member of the same patent family

 Date of the actual completion of the international search
 13 November 2008 (13.11.2008)

Date of mailing of the international search report

08 DEC 2008

 Name and mailing address of the ISA/US
 Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
 P.O. Box 1450, Alexandria, Virginia 22313-1450
 Facsimile No. 571-273-3201

 Authorized officer:
 Lee W. Young

 PCT Helpdesk 571-272-4300
 PCT OSP 571-272-7774

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To
LESTER J. VINCENT
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN
LLP
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **08 DEC 2008**

Applicant's or agent's file reference
8433P008PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US 08/78025

International filing date (day/month/year)

26 September 2008 (26.09.2008)

Priority date (day/month/year)

26 September 2008 (26.09.2008)

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - H04J 14/00 (2008.04)

USPC - 398/45

Applicant **DYNAMIC METHOD ENTERPRISES LIMITED**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

13 November 2008 (13.11.2008)

Authorized officer

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/78025

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:
- ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a)).
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:
- a. type of material
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☐ furnished subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/78025

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of

- ☐ the entire international application
☒ claims Nos. 4-9, 18-20, 25-27, and 31

because:

- ☐ the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international search (*specify*):

- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. see below are so unclear that no meaningful opinion could be formed (*specify*):

Claims 4-9, 18-20, 25-27, and 31 are improper multiple dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

- ☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed (*specify*):

- ☒ no international search report has been established for said claims Nos. 4-9, 18-20, 25-27, and 31

- ☐ a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit,

☐ furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.

☐ furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.

☐ pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rule 13ter.1(a) or (b).

- ☐ a meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-bis of the Administrative Instructions, and such tables were not available to the International Searching Authority in a form and manner acceptable to it.

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

- ☐ See Supplemental Box for further details

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 06/78025

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement							
1	Statement							
	Novelty (N)	<table border="0"> <tr> <td>Claims</td> <td>15-17 and 22-24</td> <td>YES</td> </tr> <tr> <td>Claims</td> <td>1-3, 10-14, 21, 28-30, and 32-33</td> <td>NO</td> </tr> </table>	Claims	15-17 and 22-24	YES	Claims	1-3, 10-14, 21, 28-30, and 32-33	NO
Claims	15-17 and 22-24	YES						
Claims	1-3, 10-14, 21, 28-30, and 32-33	NO						
	Inventive step (IS)	<table border="0"> <tr> <td>Claims</td> <td>None</td> <td>YES</td> </tr> <tr> <td>Claims</td> <td>15-17, 22-24</td> <td>NO</td> </tr> </table>	Claims	None	YES	Claims	15-17, 22-24	NO
Claims	None	YES						
Claims	15-17, 22-24	NO						
	Industrial applicability (IA)	<table border="0"> <tr> <td>Claims</td> <td>1-33</td> <td>YES</td> </tr> <tr> <td>Claims</td> <td>None</td> <td>NO</td> </tr> </table>	Claims	1-33	YES	Claims	None	NO
Claims	1-33	YES						
Claims	None	NO						
2	Citations and explanations: Claims 1-3, 10-14, 21, 28-30, and 32-33 lack novelty under PCT Article 33(2) as being anticipated by US 7,174,066 B1 (Look).							
	<p>As per claim 1, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising sending a first optical signal from the optical transceiver to the WSM (col. 3, in 50-55); checking a second optical signal received by the optical transceiver after sending the first optical signal (col. 3, in 50-60); and determining whether the second optical signal corresponds to the first optical signal (col. 3, in 50-60).</p> <p>As per claim 2, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising the optical transceiver putting an identification into the first optical signal to send with the first optical signal to the WSM to allow a processor communicatively coupled to the WSM to determine if the second optical signal corresponds to the first optical signal (col. 7, in 1-10).</p> <p>As per claim 3, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising varying power of the first optical signal before the first optical signal exits the WSM (col. 6, in 1-5); and measuring the second optical signal to determine whether power of the second optical signal changes in response to the varying of the power of the first optical signal (col. 6, in 54-61).</p> <p>As per claim 10, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising in response to an interrupt from a wavelength switch module (col. 2, in 22-33), identifying the wavelength switch module (col. 2, in 22-33), and identifying an input port of the WSM that receives a first optical signal from an optical transceiver (col. 2, in 22-33).</p> <p>As per claim 11, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising determining whether the optical transceiver has received a second optical signal after sending the first optical signal (col. 3, in 55-60); and identifying a wavelength designated to a channel in the WSM corresponding to the input port (col. 3, in 55-60).</p> <p>As per claim 12, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising tuning a light source of the optical transceiver to the designated wavelength if the light source is not at the designated wavelength (col. 7, in 15-20).</p> <p>As per claim 13, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising sending an error message if the light source is not at the designated wavelength (col. 4, in 45-47).</p> <p>As per claim 14, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising a wavelength switch module (WSM) (col. 3, in 28-38); an optical transceiver, detachably coupled to the WSM, to send a first optical signal to the WSM and to detect a second optical signal received from the WSM after sending the first optical signal (col. 3, in 28-38); and a set of one or more processors to automatically determine whether the second optical signal corresponds to the first optical signal in response to an interrupt from each of the WSM and the optical transceiver (col. 3, in 28-38).</p> <p>As per claim 21, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising an optical network including a plurality of optical fibers (col. 8, in 7-10); and a first optical network node, coupled to the optical network, the first optical network node comprising: a wavelength switch module (WSM) (col. 3, in 28-38); an optical transceiver, detachably coupled to the WSM, to send a first optical signal to the WSM and to detect a second optical signal received from the WSM after sending the first optical signal (col. 3, in 28-38); and a set of one or more processors to automatically determine whether the second optical signal corresponds to the first optical signal in response to an interrupt from each of the WSM and the optical transceiver (col. 3, in 28-38).</p> <p>As per claim 28, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising sending a first optical signal from an optical transceiver to an input port of a wavelength switch module (WSM), wherein the first optical signal passes through the WSM via a channel within the WSM (col. 3, in 50-55); causing a processor to look up a wavelength designated to the channel (col. 7, in 1-10); and checking whether the optical transceiver is at the wavelength designated to the channel (col. 7, in 1-10).</p>							
	(See Supplemental Box)							

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/78025

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of
Box No. V — Reasoned Statement
2 Citations and explanations.

As per claim 29, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising causing a processor to look up a wavelength designated to the channel being in response to the WSM receiving the first optical signal (col. 7, in 1-10).

As per claim 30, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising tuning a light source of the optical transceiver to the wavelength designated to the channel if the optical transceiver is not at the wavelength designated to the channel (col. 7, in 15-20).

As per claim 32, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising transmitting an optical signal of a given wavelength from an optical transceiver that is in the optical network node (col. 3, in 39-44), wherein a laser of said optical transceiver is connected to one of a plurality of add ports on one of a plurality of wavelength switch modules (WSMs) in said optical network node, wherein a light receiver of said optical transceiver is connected to a corresponding one of a plurality of drop ports on the one of the plurality of WSMs, wherein at least some of said plurality of WSMs handle different wavelengths than others and this is tracked in configuration information, and wherein a default configuration for the plurality of WSMs is to pass through a received optical signal from add port to corresponding drop port (col. 3, in 28-38); detecting the optical signal in the one of the plurality of WSMs (col. 3, in 50-60); based on said detecting of the optical signal, determining the wavelength handled by the one of the plurality of WSMs from the configuration information (col. 3, in 50-60); detecting the optical signal at the optical transceiver (col. 3, in 50-60); correlating said detections to determine that the optical transceiver is connected to the one of the plurality of WSMs (col. 3, in 50-60); and determining if the wavelength of the optical signal matches the wavelength handled by the one of the plurality of WSMs (col. 3, in 50-60).

As per claim 33, Look discloses method and an apparatus to detect signal failure on a per wavelength basis comprising wavelengths handled by each of said plurality of WSMs being tracked in configuration information of a corresponding WSM (col. 4, in 25-30).

Claims 15-17 and 22-24 lack an inventive step under PCT Article 33(3) as being obvious over Look in view of US 5,495,356 A to Bartig et al. (hereinafter 'Bartig').

As per claim 15, Look discloses method and an apparatus to detect signal failure on a per wavelength basis. However Look does not disclose the optical transceiver comprising an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM. Bartig discloses optical transceiver with improved range and data communication rate comprising the optical transceiver comprising an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM (col. 1, in 55-60). One of ordinary skill in the art would have been motivated to modify the method and an apparatus to detect signal failure on a per wavelength basis of Look and the optical transceiver with improved range and data communication rate as taught by Bartig because in order to put an identification into the first optical signal.

As per claim 16, Look in view of Bartig discloses method and an apparatus to detect signal failure on a per wavelength basis. Further Look discloses the set of one or more processors automatically determining whether the second optical signal corresponds to the first optical signal in response to the identification (col. 6, in 5-10).

As per claim 17, Look in view of Bartig discloses method and an apparatus to detect signal failure on a per wavelength basis. Further Look discloses the WSM including a variable optical attenuator to vary power of the first optical signal before the first optical signal exits the WSM and the optical transceiver includes a light detector to measure power of the second optical signal to determine whether the power of the second optical signal changes in response to the first optical signal (col. 6, in 54-61).

As per claim 22, Look discloses method and an apparatus to detect signal failure on a per wavelength basis. However Look does not disclose the optical transceiver comprising an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM. Bartig discloses optical transceiver with improved range and data communication rate comprising an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM (col. 1, in 55-60). One of ordinary skill in the art would have been motivated to modify the method and an apparatus to detect signal failure on a per wavelength basis of Look and the optical transceiver with improved range and data communication rate as taught by Bartig because in order to put an identification into the first optical signal.

As per claim 23, Look in view of Bartig discloses method and an apparatus to detect signal failure on a per wavelength basis. Further Look discloses the set of one or more processors automatically determining whether the second optical signal corresponds to the first optical signal in response to the identification (col. 6, in 5-10).

As per claim 24, Look in view of Bartig discloses method and an apparatus to detect signal failure on a per wavelength basis. Further Look discloses the WSM including a variable optical attenuator to vary power of the first optical signal before the first optical signal exits the WSM and the optical transceiver includes a light detector to measure power of the second optical signal to determine whether the power of the second optical signal changes in response to the first optical signal (col. 6, in 54-61).

Claims 1-33 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers;
claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)). The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)".

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.